

ABSTRACT**STATE MACHINE MODELLING**

5 A method of modelling a function call in a state machine comprises generating a model of a state machine which calls a function call. A function call mf1 is modelled in a second state machine which is independent of the first state machine. When the first state machine calls the function call, for example using a leafstate "calling", the function call
10 state machine mf1 is temporarily implanted over the "calling" state. Static recursion or infinite compile time recursion is avoided since the implantation is made only at the time of calling the function call, rather than at compiled time. After entering the state machine mf1, return is made to the first state machine after transition to a terminator state, which fires an event called
15 \$return (where \$ indicates scoping back one level, and return indicates an event which fires the transition to state "after"). This can be described as a synchronous function call. An asynchronous function call is shown in Figure 17. Here, a second state model is implanted in free-space, and has a lifetime which is independent of any other state machine model. An asynchronous implanted state machine returns a notification upon completion, i.e. on transition to a terminator state. Intermediate notifications may also be given. On exiting any implanted function call state machine,
20 the implantation is deleted.

25 (Figure 10).

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